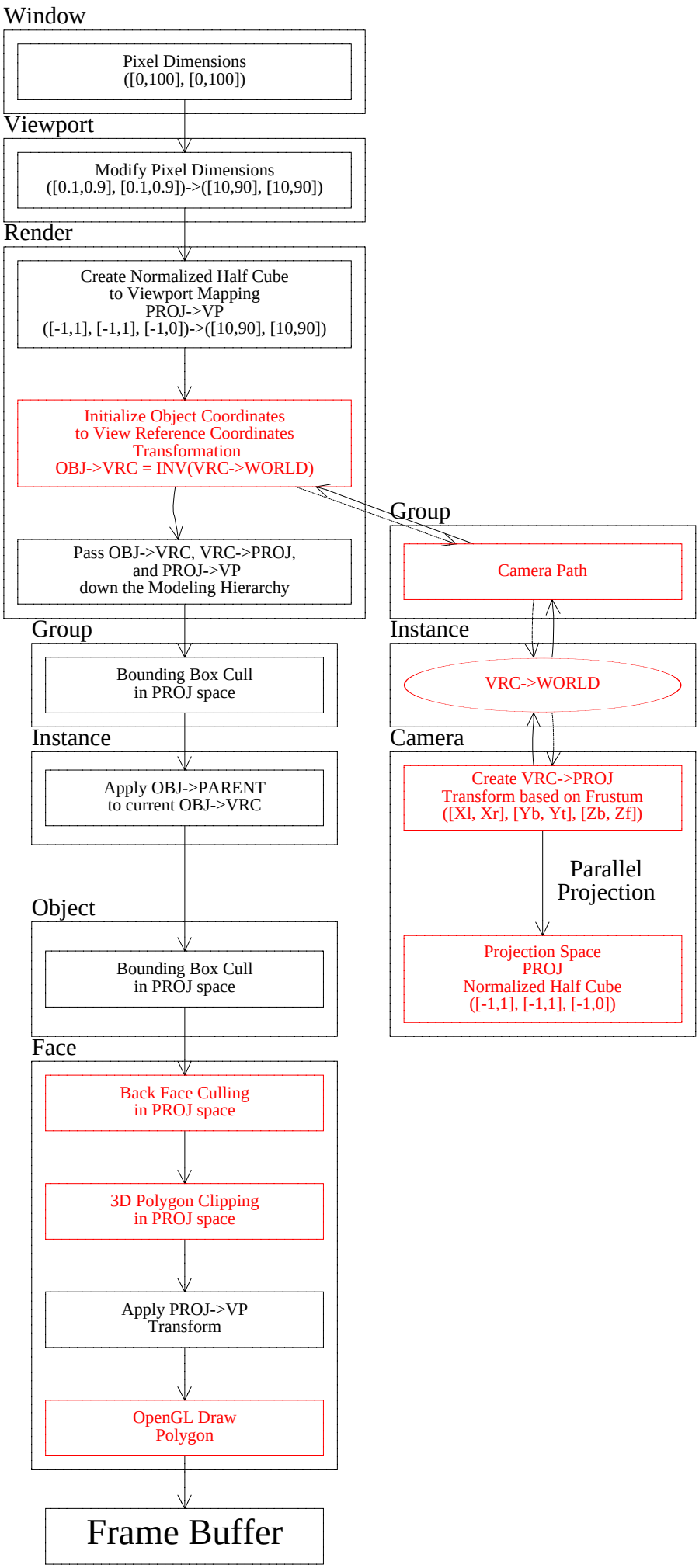
Window
Pixel Dimensions
([0,100], [0,100])
Viewport
Modify Pixel Dimensions
([0.1,0.9], [0.1,0.9])->([10,90], [10,90])
Render
Create Normalized Half Cube
to Viewport Mapping
PROJ->VP
([-1,1], [-1,1], [-1,0])->([10,90], [10,90])
Initialize Object Coordinates
to View Reference Coordinates
Transformation
OBJ->VRC = INV(VRC->WORLD)
Pass OBJ->VRC, VRC->PROJ,
and PROJ->VP
down the Modeling Hierarchy
Group
Camera Path
Group
Bounding Box Cull
in PROJ space
Instance
VRC->WORLD
Instance
Apply OBJ->PARENT
to current OBJ->VRC
Camera
Create VRC->PROJ
Transform based on Frustum
([Xl, Xr], [Yb, Yt], [Zb, Zf])
Parallel
Projection
Object
Bounding Box Cull
in PROJ space
Projection Space
PROJ
Normalized Half Cube
([-1,1], [-1,1], [-1,0])
Face
Back Face Culling
in PROJ space
3D Polygon Clipping
in PROJ space
Apply PROJ->VP
Transform
OpenGL Draw
Polygon
Frame Buffer